

Green Business Boot Camp

Presented by Fred N. Hanna, P.E.
BP Barber



Objectives and Deliverables

- Review real local business examples and case studies and establish an actionable Green Business Plan for your organization that meets the City of Columbia's Green Business Requirements



Objectives and Deliverables

- Understand the economic, environmental, and strategic reasons to become a Green Business



Objectives and Deliverables

- Understand the strategic benefits of educating your employees, customers and suppliers on your decision to Go Green



Objectives and Deliverables

- Understand how the City of Columbia's Green Business Program can reduce your business's carbon footprint.
- Learn how to quantify economic and environmental savings



Objectives and Deliverables

- Develop your Green Business Plan by setting specific goals in the following areas:
 - Waste Reduction & Recycling
 - Pollution Prevention
 - Energy Conservation
 - Water Conservation



Objectives and Deliverables

- Identify the agency's, resources and support to complete the goals you establish for your plan



Objectives and Deliverables

- Complete the requirements of The of City of Columbia's Green Business program

“Follow Our Lead; We’re Going GREEN!” and receive a window decal for your business



The economic, environmental, and strategic reasons to become a Green Business

“...business's that do not adopt a green strategy eventually will be deselected by their customers”

Saatchi & Saatchi London / NY International Creative / Branding firm clients include General Mills, Toyota, P&G



The economic, environmental, and strategic reasons to become a Green Business

“The  environmental movement”

Thomas Friedman Author - The World is Flat



The economic, environmental, and strategic reasons to become a Green Business

“A change of consciousness is a very powerful thing”

» Author unknown

“The most important thing to remember is you don’t have to change your whole life to make a difference – you can get lost in the details and completely miss the point that every little bit helps”

Carl Zichella regional Director for the Sierra Club



The economic, environmental, and strategic reasons to become a Green Business

92% of young professionals are more inclined to work for a company that is environmentally friendly

80% of young professionals are interested in jobs where they can have a + impact on the environment

Merrill Lynch outlines its environmental efforts in campus recruiting

Wall Street Journal / Monster. COM survey



Develop your Green Business Plan

Step 1

Establish your Green Team, Green Values and Communicate to your organization.

Report to CPAC



Develop your Green Business Plan

Step 2

Determine your current Green activities

Report to CPAC



Develop your Green Business Plan

Step 3

Establish your goals in some or all of the 4 CPAC goal areas

Educate & train employees, suppliers and communicate with other businesses

Apply to CPAC <http://www.coccpac.com/>



<http://www.coccpac.com>

CITY of COLUMBIAClimate Protection Action Campaign

The CPAC Committee of the City of Columbia is Preparing an Action Plan to Reduce Municipal Greenhouse Gas Emissions
[read more>](#)

The **Green Business Member** program is a partnership of public and private agencies that promote, recognize and provide support to local business that operate or are interested in operating in an environmentally responsible way. The goals worksheet is the beginning of the application process for Green Business Membership.

Participants need only choose goals which are feasible for the ir workplace. Upon submission of one significant goal participants will receive a Green Business Member decal to post in the ir workplace window.

Begin by establishing a workplace "**Green Team**."

Then, draft a narrative detailing steps taken in one or more of the following: Water Conservation, Energy Conservation, Waste Reduction and Recycling, and Pollution Prevention.

Check out our help sheets for more suggestions!

[water conservation](#)

[energy conservation](#)

[waste reduction and recyling](#)

[pollution prevention](#)

What assistance is available?

Advice and technical assistance is available at no cost from the partners of the City of Columbia Climate Protection Action Campaign . Click [to access a resource list](#) of partners.

Finally, submit one or more significant goal(s) for the coming year in one or more of the following categories: Water Conservation, Energy Conservation, Waste Reduction and Recycling, and Pollution Prevention. Click [here to complete an application](#).

TO CONTINUE: After 12 months, provide: :

Your initial audits/assessments

An updated report

One or more significant new goal(s)

And if possible tell us:

How you provide on-going training for new and current employees

How you inform your customers about your efforts to "go green"

Names of other businesses you have encouraged to join this program

Names of o the r local Green Businesses with whom you do business



Develop your Green Business Plan

Step 4

After 12 months

Report to CPAC with an update on your audits, assessments, goals, +new goals, and training, education and communications results



Step1: Establish your Green Team, Green Values and Communicate

Proactively manage your process:

Solicit Green ideas, evaluate, implement & communicate

Develop employee awareness and buy in

Integrate into daily operations

Integrate into your business strategy



Establish your Green Team, Green Values and Communicate

Green Team

BP Barber Board of Directors

The BP Barber Board of Directors provides the commitment, policy and resources for the Green Business Initiative.

Core Green Team 4-6 people

The Core Green Team will manage the Green Business Initiative, solicit Green Business Ideas from the Grass Roots Team and make recommendations to the BP Barber Board of Directors on Green Ideas to be implemented and communicated. Meet 2X Month.

Grass Roots Green Team

The Grass Roots Green Team consists of employees who gain Green Business Awareness and engage in the Green Business Initiative by offering Green Business Ideas, promoting Green Business Behaviors and implementing selected Green Business Ideas.

Membership on the Grass Roots Green Team is currently at approximately 20 members and will be expanded as we move the process forward. Electronic email distribution will be created to communicate with the Grass Roots Green Team on a periodic basis. The goal is to eventually gain full participation and support at the grass roots level to foster idea generation, implement ideas that will create a Green Business Culture and do what we can do locally to improve of our environmental performance.

Evaluators

Subject matter experts (i.e. HR , IT, etc) who will be assigned Green Business Ideas to evaluate using the Green Business Evaluation Matrix considering financial, legal, environmental, technical, policy, and feasibility perspectives and make recommendations back to the Core Green Team. Quantify economic and environmental values and document reduction to our carbon footprint. See example and web link.



Establish your Green Team, Green Values and Communicate

- Define the end state
- Clarify expectations to suppliers, employees & customers
- Demonstrate the level of organizational commitment



Establish your Green Team, Green Values and Communicate

Milliken & Company: Environmental Policy

Milliken & Company is committed to operating our plants and facilities in complete compliance with all applicable environmental regulations and to operate in a manner that protects the quality of our environment and the health and safety of our associates and the public.

We are committed to strive for a goal of zero waste generation to all media -land, air, water - to be achieved by continual improvement in all of our operations. This goal will guide the conduct of our manufacturing operations, the development of new products, and our interaction with our suppliers and customers. Recycling of materials is an integral part of this on-going effort.

We are committed to encouraging our families, our associates and our communities, through education and leadership, to conserve our natural resources and protect the environment in our daily lives.

We reaffirm our commitment to work with local, state and federal authorities to develop effective environmental solutions that meet tests of practicality and feasibility.

Roger Milliken
November 1990



Establish your Green Team, Green Values and Communicate

CMC Steel South Carolina will develop and implement the best solutions to environmental situations, by meeting or exceeding regulatory and community expectations.

To achieve environmental excellence, we will:

Ensure all employees have a vested interest in our company's environmental integrity.

Sustain our compliance in all environmental areas as key to good business.

Focus efforts on waste reduction and re-use practices that are fundamental to preserving the environment and managing costs.

Ensure all employees have a basic understanding of our facility's pollution prevention and recycling programs and how these programs compliment our environmental compliance efforts.

Promote communication, thoroughness, and persistence as essential practices that enable us to adhere to our environmental policy.

Environmental - "It's Got to be Right"



Establish your Green Team, Green Values and Communicate

BP Barber: Environmental Policy Statement

BP Barber is committed to operating in a way to protect and improve our environment and the health and safety of our employees. We are committed to complying with all environmental regulations and offering services to clients to improve the environment and their community. We are committed to encouraging our employees and suppliers to continually improve by increasing environmental awareness on the impact we can make daily through conservation, recycling and our personal choices.



Establish your Green Team, Green Values and Communicate:

MEMORANDUM

To: All Employees

From: Keith McLeod

Date: October 16, 2007

Subject: BP Barber Green Business Initiative

BP BARBER IS GOING GREEN!

BP Barber has agreed to pilot a Green Business Initiative in collaboration with the City of Columbia's *Climate Protection Action Committee (CPAC)*. The purpose of this committee is to encourage businesses to act in a manner that preserves and protects our environment and the community.

Fred Hanna is leading this effort as our Chair, and has formed a Green Team in the Columbia office that is comprised of four Core Team members (Fred Hanna, Mack Goodwin, Laraine Watkins & Gaye Milling) and 20 Grass Roots members. Although we are focusing our initial efforts in the Columbia area, we hope to expand our Green practices into the regional offices after the initial test run.

The Core Green Team will manage the Green Business Initiative, solicit Green business ideas from the Grass Roots Team and make recommendations to the BP Board of Directors on ideas to be implemented and communicated.

The Grass Roots Green Team consists of employees who gain Green Business Awareness and offer Green Business ideas, then evaluate, promote and implement selected Green Business ideas. (We plan to expand the members on the Grass Roots Team as we move the process forward.)

Plans are already underway to address workplace goals that have been identified in four specific categories: Water Conservation, Energy Conservation, Waste Reduction and Recycling, and Pollution Prevention. Several internal audits have been scheduled, and Matt Huff has begun implementing an office-wide recycling program. As we progress, you will receive status reports on how we are progressing with this initiative. Also, more information on our goals/results will be published in the upcoming issues of News Express.

The Green Team has identified the following TOP TEN practices that we would like all employees to begin doing on a day-to-day basis.

Turn off lights in your workspace (even for brief periods).

Turn off lights in unoccupied rooms.

Put your monitor in sleep mode by checking your power options under the control panel, and turn your monitor off when you leave your workspace.

Recycle paper and other recyclable consumables.

Use the double-sided copy feature.

Car pool whenever possible (even @ lunch).

Use electronic documents.

Use recycled products.

Bring a coffee cup/water flask to work and minimize use of disposable cups.

Use the teleconference equipment.

Please feel free to contact a member of the Core Green Team, if you have any ideas or questions.



Establish your Green Team, Green Values and Communicate:

Employee Newsletters

Client Newsletters

Advertising

Media



Establish your Green Team, Green Values and Communicate

			
Water Services	Environmental	Urban Development	Surveying & GIS



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 Columbia (803) 254-4400	 Florence (843) 665-9166	 Spartanburg (864) 949-1111
 Charleston (843) 767-4602	 Charlotte (704) 926-0981	 Savannah (912) 651-9086



Establish your Green Team, Green Values and Communicate

Going Green?

BP Barber can assist you with a wide range of environmentally-related engineering, planning and consulting services. For over 90 years BP Barber has been committed to protecting the environmental quality of the communities where we live and work. Everyday we work with our clients to provide sustainable, economically efficient solutions to complex environmental problems.

BP Barber offers a number of environmentally-related services within our following four service areas: Water Services; Environmental; Urban Development; and Surveying & GIS. These services include, but are not limited to:

- Neo Traditional Urban Planning/New Urbanism
- LEED Accredited Professionals
- Environmental Management
- Environmental Site Assessments
- Green Assessments and Planning
- Stormwater Management
- Air Quality Consulting
- Low Impact Development (LID)
- Sustainable Design
- Solid Waste Management
- Energy Performance Analysis
- Water Reuse
- Water Quality Studies
- Wetlands and Endangered Species



WWW.BPBARBER.COM

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Step2: Determining Current Green Activities

Current Activities

The BP Barber Board of Directors has made a commitment to the Green Business Initiative. As a consulting firm to local government and the development community we offer our clients services targeted to preserve and protect the environment and the communities we serve.

BP Barber provides environmental leadership by providing volunteer executive leadership and sponsorship for many significant environmental and professional organizations that address environmental issues

Water Conservation

Offer Low Impact Development (LID to clients for civil site design)

Energy Conservation

LEED s qualified for Civil Engineering Practice

All of our computer purchases are “Energy Star Compliant”

Installed Teleconferencing Equipment in our offices

Waste Reduction and Recycling

Using Recycled Paper in our operations

Using email for our employee newsletter distribution

Purchasing office chairs made with recycled material

Pollution Prevention

Sponsoring “Adopt a Highway” for Farrow Road Segment

Designing decentralized wastewater systems for developer clients with projects in environmentally sensitive areas

Volunteering to work at Landfill @ American Recycling Day



Step3: Setting workplace goals

Waste Reduction & Recycling

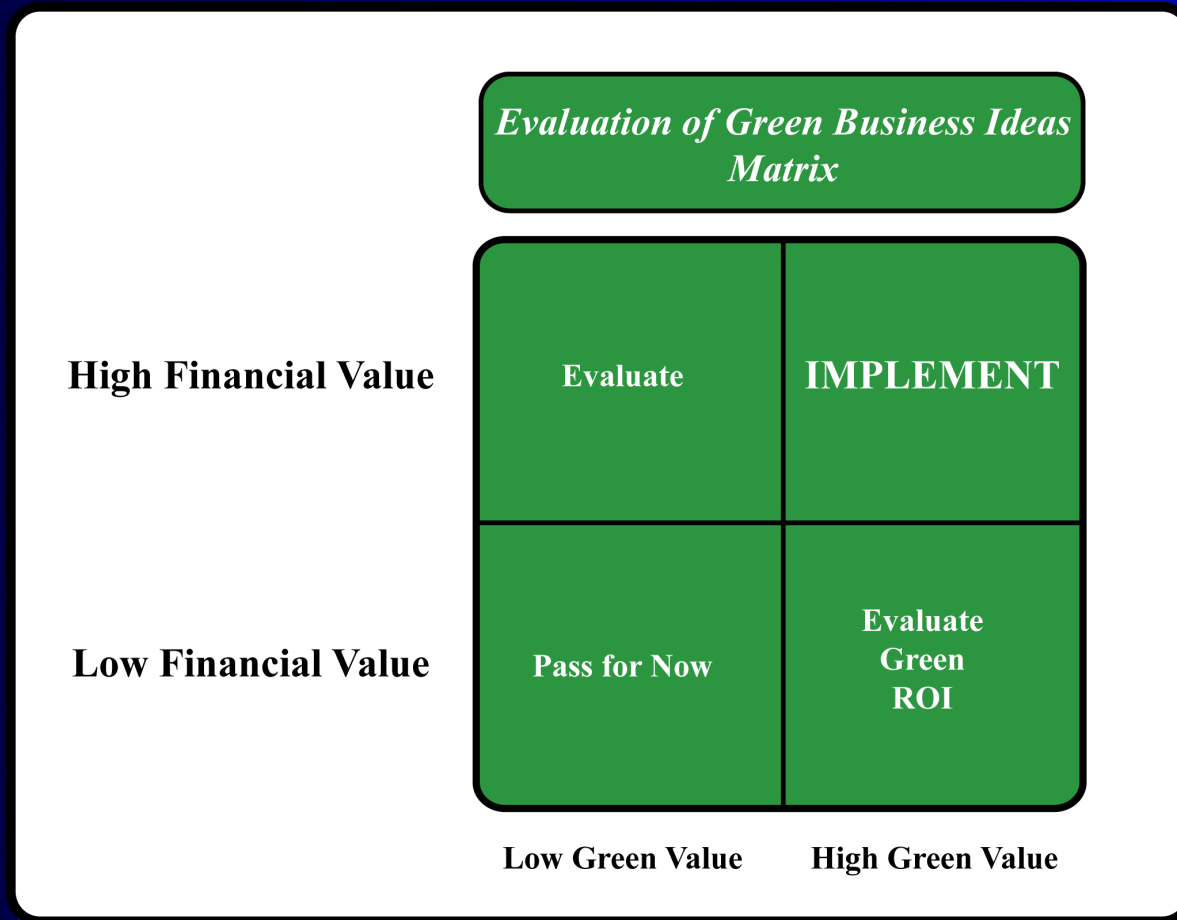
Pollution Prevention

Energy Conservation

Water Conservation



Evaluation Green ROI



Setting specific goals – case study – Waste Reduction & Recycling

The following goals to be evaluated, implemented if applicable and communicated during the last quarter of 2007 subsequently a new list of goals will be solicited

Recycling for all waste lines	completed
Purchase Green products and services	completed
Project Email Printing	evaluating
Employee concierge services / break room	evaluating
Plans and Specs reproduction	evaluating
Air dryers vs. paper towels	evaluating



Setting specific goals – case study – Pollution Prevention

The following goals to be evaluated, implemented if applicable and communicated during the last quarter of 2007 subsequently a new list of goals will be solicited

Car pooling

Telecommuting flex work plan

American Recycling Day

Sustainable Interiors /Leeds

evaluating

evaluating

completed

evaluating



Setting specific goals – case study – Energy Conservation

The following goals to be evaluated, implemented if applicable and communicated during the last quarter of 2007 subsequently a new list of goals will be solicited

Change incandescent lights to CFL

Lighting audit

Energy Audit

PC settings hibernate

Equipment and Vehicles

implementing

completed

completed

completed

evaluating



Setting specific goals – case study – Water Conservation

The following goals to be evaluated, implemented if applicable and communicated during the last quarter of 2007 subsequently a new list of goals will be solicited.

Audit water consuming devices

evaluating



Quantify economic and environmental savings

We operate 138 – 65 watt inside spot lights.
These could easily be replaced with 11 watt compact fluorescents resulting in 54 watts per bulb savings.

54 watts @ 138 = 7,452 watts or 7.45 KW

12 hours operation /day @ 5 days /week @52 weeks = 3,120 hours/ year

7.45 kW @ 3,120 hours = 23,244 kWh

(Retail may use 3,838 hour to account for weekends)



Quantify economic and environmental savings

Because incandescent lights use only 10% of the energy for light the other 90% goes to heat which has to be removed anytime the cooling system operates.

For many commercial building due to internal heat load i.e. lighting, computers, people, etc the AC may run easily 7-9 months or more per year. An additional benefit is heat load reduction on the ac system. We accounted for no savings to be conservative.



Quantify economic and environmental savings

23,244 kWh @ \$.08 /kWh results in annual savings is \$ 1,859 / year

Life of Compact Fluorescents 10,000 hours

Year 1 cost of compact fluorescents (cfl) \$4 / cfl
@ 138 = \$552

@ 5.25% weighted average cost of capital the
Present Value over 5 years is



Quantify economic and environmental savings

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
\$Save	1,859	1,859	1,859	1,859	1,859	1,859	1,859	1,859	1,859	1,859
\$cost	552			552			552			
\$net	1,307	1,859	1,859	1,307	1,859	1,859	1,307	1,859	1,859	1,859
\$PV	1,307	1,690	1,594	1,065	1,441	1,300	913	1,234	1,173	1,114



Quantify economic and environmental savings

Net Present Value \$12,831 savings

Deferred Base Load Generation 7.45 KW

@ \$1,250 /KW = \$9,312

Implementation Recommendation – building manager to change incandescent bulbs with compact fluorescent and expand to other areas.

Bulbs replaced will be donated to Habitat for Humanity or another recycler listed in the *2007 Index of Waste Minimization Resources* published by the Center for Waste Minimization @ SCDHEC www.scdhec.gov/cwm if they have a useful life remaining.



Quantify economic and environmental savings

Environmental Savings – reference source (:
<http://www.usctcgateway.net/tool/#>)

Electricity use (kilowatt-hours)

1,514 lbs CO₂ per megawatt-hour delivered

1 mwh/1000 kwh or

1.514 lbs per kwh delivered

1 metric ton / 2203 lb



Quantify economic and environmental savings

23,244 kwh * 1.514 # CO2 per kwh =
35,191 # CO2

35,191 #CO2 divided by 2,203 # per ton =
16 metric tons CO2



Quantify economic and environmental savings

Your total greenhouse gas reduction is 16 tons of Carbon Dioxide Equivalent.



Quantify economic and environmental savings

This is equivalent to one of the following:

3.53 Passenger cars not driven for one year

1,860 Gallons of gasoline

38 Barrels of oil Tanker trucks filled with gasoline



2.1 Household electricity use for one year
(number of households)

419 Number of tree seedlings grown for 10 years

14 Acres of pine or fir forests storing carbon for
one year



Quantify economic and environmental savings

680 Propane cylinders used for home barbeques

5.5 Tons of waste recycled instead of landfilled



Step4: Follow up with CPAC

After 12 months,
Report to CPAC an update on your audits,
assessments, goals, +new goals, and training,
education and communications results



Questions?

Discussion?

Copies of slides, and Green Business Plan can be made available by emailing me

fhanna@bpbarber.com



Identify the agency's, resources and support to complete the goals you establish for your plan :

Introduction of Agency Resources for Green Table Talk

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Web sites

– Waste Reduction & Recycling

SCDHEC.org

keepthemidlandsbeautiful.com

Coccpac.org

ecocycle.org/junkmail/index.cfm



Web sites

– Pollution Prevention

Epa.gov

www.lamprecycle.org/



Web sites

- Energy Conservation
 - touchstoneenergysavers.com/
 - 1.eere.energy.gov/consumer/tips/
 - aeecenter.org/
 - aredi.org/
 - gelighting.com/na/



Web sites

– Water Conservation

H2ouse.org

Wateruseitwisely.com

Awwa.org/community

Epa.gov/watersense

Energystar.gov

Boschappliances.com

Niagraconservation.com

